

CLAIM AMENDMENTS

1. (Currently Amended) A photomask having a pattern ~~formed~~ on a substrate and composed of a material ~~permeating transmitting~~ exposing light ~~by providing~~ and light-shielding portions ~~using of~~ a material that ~~shields said~~ does not transmit the exposing light, said pattern comprising:

a central pattern portion having a plurality of line patterns ~~formed~~, leaving a predetermined distance on ~~the~~ a central portion of ~~said the~~ substrate; and

a peripheral pattern portion ~~formed in the vicinity of the~~ located proximate a peripheral portion of said substrate ~~so as to surround said~~, surrounding the central pattern portion.

2. (Currently Amended) The photomask according to claim 1, wherein the line width of each of said line patterns is at least λ/NA ~~or more~~, where λ is the wavelength of the exposing light of ~~the~~ an exposing apparatus used for transferring the patterns, and NA is the numerical aperture of ~~the~~ a projection lens of the exposing apparatus.

3. (Currently Amended) The photomask according to claim 1, wherein the length of said line pattern is at least 10 μm ~~or more~~.

4. (Original) The photomask according to claim 1, wherein the number of said line patterns is 9.

5. (Currently Amended) The photomask according to claim 1, wherein said photomask further comprises an open portion ~~wherein~~ where no light-shielding portion is ~~formed~~ located;

said open portion ~~is disposed so as to surround~~ surrounds said central portion; and

said peripheral pattern portion ~~is disposed so as to surround~~ surrounds said open portion.

6. (Currently Amended) The photomask according to claim 5, wherein: said open portion has a width equal to or larger than a threshold value, wherein: ~~said the~~ said threshold value is the ~~value of~~ width of said open portion ~~at the time~~ when the line width of a transferred pattern corresponding to said line pattern in said central portion becomes constant, despite widening of the ~~width of said~~ open portion.

7. (Currently Amended) A flare measuring mechanism comprising:

a first photomask comprising a first central pattern portion ~~formed of~~ including a first line pattern on ~~the~~ a central portion of a substrate, and a first peripheral pattern portion ~~formed so as to surround~~ surrounding said first central pattern portion;

a second photomask comprising a second central pattern portion ~~formed of~~ including a second line pattern ~~of~~ having the same shape as said first central pattern portion, and a second peripheral pattern portion ~~formed so as to surround said~~ surrounding the second central pattern portion, and having a the distance between said second central pattern portion and said second peripheral pattern portion different from the distance between said first central pattern portion and said first peripheral pattern portion; and

~~a~~ calculation means for measuring ~~a~~ flare rate by transferring each pattern on said first and second photomasks, measuring the line width of each of ~~patterns transferred~~ the first and second line ~~pattern~~ patterns transferred, and calculating the difference between the line width of the pattern corresponding to said first line pattern and the line width of the pattern corresponding to said second line pattern.

8. (Currently Amended) The flare measuring mechanism according to claim 7, wherein

the distance between said second central pattern and said second peripheral pattern of said second photomask has ~~the~~ a length of at least a threshold value ~~or more~~, wherein ~~said the~~ threshold value is ~~the value of~~ the distance between said second central pattern and said second peripheral pattern ~~at the time~~ when the line width of ~~transferred~~ the pattern transferred and corresponding to ~~said the~~ line pattern in said central portion becomes constant, despite widening of the distance between said second central pattern and said second peripheral pattern.

9. (Currently Amended) The flare measuring mechanism according to claim 7, wherein the line width of said first and second line patterns is at least λ/NA ~~or more~~, where λ is ~~the~~ wavelength of exposing light used for transferring patterns, and NA is ~~the~~ numerical aperture of ~~the~~ a projection lens used in transferring patterns.

10. (Currently Amended) The flare measuring mechanism according to claim 7, wherein the line length of said first and second line patterns is at least 10 μm ~~or more~~.

11. (Currently Amended) The flare measuring mechanism according to claim 7, wherein the number of lines of said first and second line patterns is at least 9 or more.

12. (Currently Amended) The flare measuring mechanism according to claim 7, wherein said calculation means comprises a conversion table for converting the difference of each line width obtained, based on the basis of the measured results of line widths measured, using said measurement means, into the flare rate.

13. (Currently Amended) A flare measuring method comprising:
~~a first pattern transferring step for transferring the a first pattern of the a first~~
photomask comprising said first pattern including a first central pattern portion having a first line pattern ~~formed on the~~ located at a center of a substrate, and a first peripheral pattern portion ~~formed around~~ surrounding said first central pattern portion, onto the substrate;
~~a second pattern transferring step for transferring the a second pattern of the a second~~
photomask comprising ~~said a second pattern~~ including a second central pattern portion having a second line pattern, the same as said first line pattern ~~formed on the, located at a~~ center of a substrate, and a second peripheral pattern portion ~~formed around~~ surrounding said second central pattern portion, and having ~~the a~~ distance between said second central pattern portion and said second peripheral pattern portion different from ~~the~~ distance between said first central pattern portion and said first peripheral pattern portion, onto the substrate;
~~a first line width measuring step for measuring the line width of said first line pattern~~
transferred onto the substrate ~~in said first pattern transferring step~~;
~~a second line width measuring step for measuring the line width of said second line~~
pattern transferred onto the substrate ~~in said second pattern transferring step~~; and
~~a calculating step for calculating the flare rate by obtaining the difference between the~~
line ~~width~~ widths measured ~~in said first line width measuring step and the line width~~
~~measured in said second line width measuring step.~~

14. (Currently Amended) The flare measuring method according to claim 13, wherein
the distance between said second central pattern and said second peripheral pattern of said second photomask has ~~the a~~ length of said, at least a threshold value or more, wherein ~~said the~~ threshold value is the ~~value of the~~ distance between said second central pattern and said second peripheral pattern ~~at the time~~ when the line width of ~~transferred the~~ pattern transferred and corresponding to said line pattern in said central portion becomes constant,

despite widening of the distance between said second central pattern and said second peripheral pattern.

15. (Currently Amended) The flare measuring method according to claim 13, wherein the line width of said first and second line patterns is at least λ/NA or more, where λ is ~~the~~ wavelength of exposing light of ~~the~~ an exposing apparatus used for transferring patterns, and NA is ~~the~~ numerical aperture of ~~the~~ a projection lens used in transferring patterns.

16. (Currently Amended) The flare measuring method according to claim 13, wherein the line length of said first and second line patterns is at least 10 μm or more.

17. (Original) The flare measuring method according to claim 13, wherein the number of lines of said first and second line patterns is 9.

18. (Currently Amended) The flare measuring method according to claim 13, wherein said flare rate is calculated based on ~~the basis of~~ data from the difference ~~on~~ of said line widths.

19. (Currently Amended) The flare measuring method according to claim 13, ~~wherein including transferring said first and second patterns are transferred onto different places of locations on a wafer.~~

20. (Currently Amended) An exposing method comprising:
~~a step for~~ inputting a flare rate;
~~a step for~~ calculating difference in line width ~~at a flare rate from said~~ the flare rate, ~~on the basis of with reference to~~ and at a 0% flare rate;
~~a step for~~ calculating ~~the~~ a corrected exposure from ~~said~~ the difference in line width;
and
~~a step for~~ exposing, while controlling exposure based on ~~the basis of said~~ the corrected exposure.